

10/526033

The following documents are references:

D1: GB - A - 2 309 108

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D2: US - A - 5 598 032

D3: EP - A - 1 143 379

D4: JP 2002 23 69 01

D5: US - A - 6 111 303

International search report

D6: JP 2002 27 93 77

Publication date 27.09.2002; PCT rule  
64.3

Documents D1, D2, D3, D4 and D6 were not mentioned in the international search report.

**Concerning point V**

Novelty, inventive activity: quotations/explanations (PCT clause 33 (2, 3); PCT rule 66.2 a ii)

1. This invention relates to a cell phone which includes a smart card with a passive antenna (as shown in D1 and D2).

Consequently, the problem that arises is that the antennas of these cards only have a limited range. The solution proposed in this application is to communicate with the smart card by coupling surface pins of the card with an antenna of an auxiliary equipment (the cell phone). The smart card can then use the antenna of the cell phone for contactless communication with other equipment (page 6, lines 18 - 22). This external antenna may be larger than an antenna integrated in the card, so that the communication range can be increased.

This fundamental concept (the antenna is in an external equipment, namely the battery, rather than in the card) is clearly defined in the independent claims. **Claim 1** defines a communication process with the telephone and its removable battery using an antenna fixed to the battery, and **claim 3** defines this cell phone.

2. **The closest prior art D4** is the only document that describes communication between a cell phone and a smart card. In D4, the cell phone antenna is not fixed to the removable battery. No document describes such an antenna, nor

connections between this antenna and a connection interface of a smart card. Consequently, those skilled in the art could not reach the claimed solution by reading the state of the art.

3. D1 describes a smart card with a chip (No. 2) provided with at least two surface pins (No. 8 and 8') and a processing module, that also includes a radio-frequency interface associated with the processing module and connected to the two surface pins.

D2 thus divulges a smart card with a chip equipped with at least two surface pins (D2, Fig. 8, No. 11) and a processing module. It also comprises a radio frequency interface associated with the processing module and connected to the two surface pins (Fig. 8 and 9, No. 24). A smart card with ISO surface pins electrically coupled to an antenna is also known in D3 and D4 (Fig. 5).

4. D6 (PCT rule 64.3, 70.10) describes an adaptor for an ISO smart card 7816-2 with an external antenna. This document does not describe a cell phone.

Other comments

**Irregularities in the international application (PCT rules 5-7).**

5. Documents D1, D2, D3, D4, D5, D6 are not mentioned in the description (PCT rule 5.1 a ii).
6. Independent claims 1 and 3 are not presented in two parts (PCT rule 6.3 b). D4 may be considered as being the closest prior art.

CLAIMS10/526033  
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1. Communication process, comprising the following steps:

- 5       - supply of a cell phone (4) provided with a body, a removable battery, at least one antenna (11) fixed to the removable battery and at least two pins (A4, A8) connected to the antenna (11);
- 10       - supply of a smart card (1), the said antenna being external to the chip, the smart card having a chip (21) supplied with:
  - at least two surface pins (C4, C8);
  - a processing module (25);
  - a radio-frequency interface (22) associated with the processing module (25) and connected to the
  - 15       surface pins (C4, C8) of the card (1), the surface pins of the card being coupled to the pins (A4, A8) of the cell phone (4);
  - transmission of electrical signals between the surface pins of the card and the antenna.

20       2. Process according to claim 1, characterised in that the supplied smart card is in the format given in ISO standard 7816-2 and in that the surface pins of the card are pins C4 and C8.

25       3. Cell phone (4) with:

- a body (5);
- a removable battery;
- an antenna (11) fixed to the removable battery;

and

30       - a coupling interface (A1 - A8) possibly being coupled to a smart card (1) and having two pins (A4, A8) connected to the antenna (11) and possibly being coupled to surface pins (C4, C8) of a said smart card (1).

4. Cell phone according to claim 3, characterised in that:

- the telephone pins may be coupled to pins C4 and C8 of a smart card in the format of the ISO 7816-2 standard.

5. Cell phone according to claim 3 or 4, characterised in that the cell phone is an organizer.

6. Cell phone according to one of claims 3 to 5, characterised in that the antenna is active.